Driver/Operator

Course Plan

Course Details

Certification: Fire Apparatus Driver/Operator – Pumping Apparatus

CTS Guide: Fire Apparatus Driver/Operator – Pumping Apparatus (August 2015)

Description: This course provides information on fire apparatus preventive maintenance and driving/operating. Topics include routine tests, inspections, and servicing functions, operate, back, maneuver, and turn a fire apparatus in a variety of conditions; and operate all fixed systems and equipment on a fire apparatus. This course is based on the 2014 edition of *NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications*. This course fulfills the requirements for a Class C Firefighter Endorsement.

Designed For: Career and volunteer fire service personnel who drive and operate fire apparatus

Prerequisites: Hold a valid Class C driver's license (minimum)

Standard: Complete all activities and skills
Complete the summative test with a minimum score of 80%

Hours:

Lecture:	17:30
Activities:	3:30
Skills:	17:00
Testing:	2:00

Hours (Total): 40:00

Maximum Class Size: 30

Instructor Level: This courses requires one (1) primary instructor and sufficient assistant instructors to meet the skills ratio

Instructor/Student Ratio: Lecture: 1:30 Skills: 1:10

Restrictions: Sufficient fire apparatus and adequate space to accommodate the students in the class and the required skills

SFT Designation: CFSTES

Required Resources

Instructor Resources

To teach this course, instructors need:

- *Fire Apparatus Driver/Operator,* Second Edition, Jones & Bartlett, ISBN: 9781284026917
  or
  Pumping and Aerial Apparatus Driver/Operator Handbook, Third Edition, IFSTA, ISBN: 9780879395711
- Maintenance and inspection forms
- Manufacturer's specifications and requirements
- Applicable state and local laws

Online Instructor Resources

The following instructor resources are available online at http://osfm.fire.ca.gov/training/SFTCurriculum.php

- Fire Apparatus Driver/Operator 1A: Driver Operator required activities

Student Resources

To participate in this course, students need:

- *Fire Apparatus Driver/Operator*, Second Edition, Jones & Bartlett, ISBN: 9781284026917
  or
  Pumping and Aerial Apparatus Driver/Operator Handbook, Third Edition, IFSTA, ISBN: 9780879395711
- Personal protective clothing

Facilities, Equipment, and Personnel

The following facilities, equipment, or personnel are required to deliver this course:

- Standard learning environment or facility
- Writing board or paper conference pads
- Markers, erasers
- Computer or tablet with presentation or other viewing software
- Amplification devices
- Projector and screen
- Sufficient fire apparatus to accommodate the students in the class
- Tools and equipment for inspection and testing
- Tape measure
- Traffic cones
- Delineators
- Left front tire marker
- Optional straight line marker

- Vertical obstacle
- Spotters
- Personal protective clothing
- Adequate space to accommodate the required skills

Unit 1: Introduction

Topic 1-1: Orientation and Administration

Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, resources, evaluation methods, and participation requirements in the course syllabus.

Enabling Learning Objectives

1. Identify facility requirements
   - Restroom locations
   - Food locations
   - Smoking locations
   - Emergency procedures
2. Identify classroom requirements
   - Start and end times
   - Breaks
   - Electronic device policies
   - Special needs and accommodations
   - Other requirements as applicable
3. Review course syllabus
   - Course objectives
   - Calendar of events
   - Course requirements
   - Student evaluation process
   - Assignments
   - Activities
   - Required student resources
   - Class participation requirements

Discussion Questions

1. What is a formative test? What is a summative test?

Activities

1. To be determined by the instructor.

Topic 1-2: Fire Apparatus Driver/Operator – Pumping Apparatus Certification Process

Terminal Learning Objective

At the end of this topic, a student will be able to identify the courses and requirements for the Fire Apparatus Driver/Operator – Pumping Apparatus certification, and be able to describe the certification task book and testing process.

Enabling Learning Objectives

1. Identify the courses required for Fire Apparatus Driver/Operator – Pumping Apparatus certification
   - Fire Apparatus Driver/Operator 1A: Driver/Operator
   - Fire Apparatus Driver/Operator 1B: Pumping Apparatus Operations
2. Identify any other requirements for Fire Apparatus Driver/Operator – Pumping Apparatus certification
   - OSFM certified Fire Fighter I
   - Experience [one (1) of the following two (2) options]
     - Option 1: Have a minimum of one (1) year full-time, paid experience in a California fire department with the primary responsibility as a pumping apparatus driver/operator
     - Option 2: Have a minimum of two (2) years volunteer or part-time, paid experience in a California fire department with the primary responsibility as a pumping apparatus driver/operator
   - Be appointed to the rank or position of Fire Apparatus Driver/Operator
     - Performing in an acting capacity does not qualify
3. Describe the certification task book process
   - Complete all prerequisites and course work
   - Submit application and fees to request certification task book
   - Complete all job performance requirements included in the task book
   - Must have identified evaluator verify individual task completion via signature
   - Must have Fire Chief or authorized representative verify task book completion via signature
   - Must be employed by a California Fire Agency in the position prior to submitting completed task book to State Fire Training
4. Describe the certification testing process
   - Complete course work
   - Schedule online certification test
   - Schedule skills evaluation test

Discussion Questions

1. What is the experience required for certification?

Activities

1. To be determined by the instructor.

Unit 2: Preventive Maintenance

Topic 2-1: Perform Routine Tests, Inspections, and Servicing Functions

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus, tools and equipment, manufacturer's specifications and requirements, and policies and procedures of the

jurisdiction, will be able to perform routine tests, inspections, and servicing functions on the systems and components of a fire apparatus to verify their operational status.

Enabling Learning Objectives

1. Recognize manufacturer specifications and requirements
2. Review policies and procedures of the jurisdiction
3. Describe fire apparatus systems and components
    - Braking system
    - Coolant system
    - Electrical system
    - Exhaust system
    - Fuel systems
    - Steering and suspension systems
    - Batteries
    - Belts
    - Body, frame, and cab
    - Fluids
    - Lighting
    - Oil and lubrication
    - Tires
    - Tools, appliances, and equipment
4. Use tools and equipment
5. Inspect fire apparatus
6. Recognize system problems and out-of-service criteria
7. Correct any deficiency noted according to policies and procedures and/or manufacturer specifications and requirements

Discussion Questions

1. What recent changes have occurred to diesel exhaust technology?
2. Why do we inspect our fire apparatus?
3. Describe a situation where you were involved and the fire apparatus mechanically failed. Why did this failure occur?
4. What is your jurisdiction's fire apparatus inspection procedure?

Activities

1. Divide students into small groups. Have each group perform a fire apparatus inspection using a form provided by the instructor. They will present their findings after the activity in Topic 2-2.

CTS Guide Reference: CTS 1-1

Topic 2-2: Document Routine Tests, Inspections, and Servicing Functions

Terminal Learning Objective

At the end of this topic, a student, given maintenance and inspection forms, will be able to document routine tests, inspections, and servicing functions by checking all items for proper operation and reporting any deficiencies.

Enabling Learning Objectives

1. Identify jurisdictional requirements for documenting maintenance performed
2. Describe the importance of keeping accurate records
3. Complete related jurisdictional forms

Discussion Questions

1. What are your jurisdiction's requirements for documenting maintenance performed or requesting repairs?
2. What intervals does your jurisdiction require you to document your inspection?
3. What are the consequences of falsifying inspection documents?

Activities

1. Have each group document their fire apparatus inspection using a form provided by the instructor and present their findings.

Instructor Notes

1. Topics 2-1 and 2-2 can be taught concurrently.

CTS Guide Reference: CTS 1-2

Unit 3: Driving/Operating

Topic 3-1: Operate a Fire Apparatus

Terminal Learning Objective

At the end of this topic, a student, given fire apparatus, applicable state and local laws, policies and procedures of the jurisdiction, and a predetermined route on a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, will be able to operate a fire apparatus following a predetermined route on a public way in compliance with all applicable state and local laws and policies and procedures of the jurisdiction.

Enabling Learning Objectives

1. Describe the importance of wearing passenger restraint devices to ensure crew safety
2. Identify common causes of fire apparatus accidents
3. Recognize that fire apparatus drivers/operators are responsible for the safe and prudent operation of the apparatus under all conditions
4. Discuss proper positioning of a fire apparatus
   - Statement of Cooperation's, Highway emergencies
5. Explain the effects of liquid surge, braking reaction time, and load factors
6. Explain the effects of high center of gravity on roll-over potential, general steering reactions, speed, and centrifugal force
7. Describe applicable laws and regulations
   - Driver's license requirements
   - Medical requirements
8. Review policies and procedures of the jurisdiction
9. Explain the principles of skid avoidance, night driving, shifting, and gear patterns
10. Explain negotiating intersections, railroad crossings, and bridges

11. Describe the weight and height limitations for both roads and bridges
12. Discuss automatic braking systems in wet and dry conditions
13. Identify automotive gauges and their operation
14. Discuss the operational limits of the various types of fire apparatus
15. Operate passenger restraint devices
16. Maintain safe following distances
17. Maintain control of the fire apparatus while accelerating, decelerating, and turning, given road, weather, and traffic conditions
18. Operate under adverse environmental or driving surface conditions
19. Use automotive gauges and controls

Discussion Questions

1. Who is responsible for ensuring passenger restraint devices are worn? What is the potential liability and emotional stress?
2. What would you consider when driving an apparatus in inclement weather?
3. Does your jurisdiction have any specific operational limits?
4. How is driving a fire apparatus different than driving your personal vehicle?
5. How would you position a fire apparatus at a _____?

Activities

1. Divide students into small groups. Have each group review a fire apparatus accident and develop recommendations for preventing a reoccurrence? Have each group present their findings.

Instructor Note

1. Review student supplement 3-1 with students, “Statement of Cooperation”

CTS Guide Reference: CTS 2-1

Topic 3-2: Operate a Fire Apparatus Using Defensive Driving Techniques

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus, applicable laws and regulations, policies and procedures of the jurisdiction, and an assignment, will be able to operate a fire apparatus during emergency and nonemergency responses using defensive driving techniques while maintaining control of the apparatus.

Enabling Learning Objectives

1. Review policies and procedures of the jurisdiction related to emergency response
2. Describe applicable laws and regulations related to emergency response
   - California Vehicle Code
   - Local jurisdictional requirements
3. Discuss defensive driving techniques for emergency and nonemergency response

Discussion Questions

1. What is jurisdiction’s policy on Code 3 driving?
2. What are some considerations when approaching an intersection?

Activities

1. Divide students into small groups. Give each group a topic and have them identify the applicable California Vehicle Code (CVC) section and prepare a brief summary highlighting its important points. Have each group present their findings.

Instructor Notes

1. Topics 3-1 and 3-2 can be taught concurrently.

CTS Guide Reference: CTS 2-6

Topic 3-3: Back a Fire Apparatus from a Roadway into a Restricted Space

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus, spotter, and a restricted spaces requiring 90-degree right- and left-hand turns from the roadway (12 feet wide), will be able to back a fire apparatus from a roadway and park into a space with restrictions on both the right and left sides of the apparatus without stopping, pulling forward, and without striking any obstructions.

Enabling Learning Objectives

1. Identify fire apparatus dimensions
2. Describe turning characteristics
3. Discuss spotter signaling
4. Explain principles of safe fire apparatus operation during exercise
5. Use mirrors to judge fire apparatus clearance

Discussion Questions

1. What type of communication do you need with your spotter?
2. What are the dangers of backing your fire apparatus?

Activities

1. Activity 3-3-1: Alley Dock or Activity 3-3-2: Station Parking

CTS Guide Reference: CTS 2-2

Topic 3-4: Maneuver a Vehicle around Obstructions on a Roadway While Moving Forward and in Reverse

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus, spotter, and a roadway with obstructions, will be able to maneuver a fire apparatus around obstructions on a roadway while moving forward and in reverse without stopping to change the direction of travel and without striking any obstructions.

Enabling Learning Objectives

1. Identify fire apparatus dimensions
2. Explain principles of safe fire apparatus operation during this exercise
2. Use mirrors to judge fire apparatus clearance

Discussion Questions

1. How do you determine the pivot point of your fire apparatus?
2. How is liquid surge going to affect apparatus control?

Activities

1. Activity 3-4-1: Serpentine

CTS Guide Reference: CTS 2-3

Topic 3-5: Turn a Fire Apparatus 180 Degrees within a Confined Space

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus, spotter, and an area in which the fire apparatus cannot perform a U-turn without stopping and backing up, will be able to turn a fire apparatus 180 degrees within a confined space without striking any obstructions.

Enabling Learning Objectives

1. Explain principles of safe fire apparatus operation during this exercise
2. Use mirrors to judge fire apparatus clearance

Activities

1. Activity 3-5-1: Confined Space Turnaround

CTS Guide Reference: CTS 2-4

Topic 3-6: Maneuver a Fire Apparatus in Areas with Restricted Horizontal and Vertical Clearances

Terminal Learning Objective

At the end of this topic, a student, given a fire apparatus and a course with restricted horizontal and vertical clearances will be able to maneuver a fire apparatus in areas with restricted horizontal and vertical clearances and accurately judge the ability of the apparatus to pass through the openings without striking any obstructions

Enabling Learning Objectives

1. Identify fire apparatus dimensions
2. Explain principles of safe fire apparatus operation during this exercise
3. Use mirrors to judge fire apparatus clearance

Discussion Questions

1. Where do you find the height of a fire apparatus?
2. Why is the height important?

Activities

1. Activity 3-6-1: Diminishing Clearance

CTS Guide Reference: CTS 2-5

Topic 3-7: Operate All Fixed Systems and Equipment on a Fire Apparatus

Terminal Learning Objective

At the end of this topic, a student, given fixed systems and equipment, manufacturer's specifications and requirements, and policies and procedures for the jurisdiction will be able to operate all fixed systems and equipment on a fire apparatus not specifically addressed elsewhere in this standard in accordance with the applicable instructions and policies.

Enabling Learning Objectives

1. Identify fixed systems and equipment on a fire apparatus
   - Electric power generators
   - Scene lighting
   - Electrical power distribution equipment
   - Rescue tools
   - Other jurisdictional fixed systems or equipment
2. Recognize manufacturer's specifications and requirements
3. Review policies and procedures of the jurisdiction
4. Deploy, energize, and monitor the system or equipment
5. Recognize and correct any deficiency according to policies and procedures and/or manufacturer specifications and requirements

Discussion Questions

1. What types of fixed systems and equipment do you have on your fire apparatus?
2. How often should fixed systems or equipment be inspected and to what detail?
3. In which order do you inspect your fixed systems?

Activities

1. To be determined by the instructor.

CTS Guide Reference: CTS 2-7

Time Table

Segment	Lecture Time	Activity/Skills Time	Total Unit Time
Unit 1: Introduction			
Topic 1-1: Orientation and Administration			
Lecture	0:30		
To be determined by instructor			
Topic 1-2: Fire Apparatus Driver/Operator Certification Process			
Lecture	0:30		
To be determined by instructor			
Unit 1 Totals	**1:00**	**0:00**	**1:00**
Unit 2: Preventive Maintenance			
Topic 2-1: Perform Routine Tests, Inspections, and Servicing Functions			
Lecture	5:00		
Recommended activity		1:00	
Topic 2-2: Document Routine Tests, Inspections, and Servicing Functions			
Lecture	0:30		
Recommended activity		0:30	
Unit 2 Totals	**5:30**	**1:30**	**7:00**
Unit 3: Operating/Driving			
Topic 3-1: Operate a Fire Apparatus			
Lecture	6:00		
Recommended activity		1:00	
Topic 3-2: Operate a Vehicle Using Defensive Driving Techniques			
Lecture	3:00		
Recommended activity		1:00	
Topic 3-3: Back a Vehicle from a Roadway into Restricted Spaces			
Lecture	0:15		
Activity 3-3-1: Alley Dock ***or*** Activity 3-3-2: Station Parking		*	
Topic 3-4: Maneuver a Vehicle around Obstructions on a roadway While Moving Forward and In Reverse			
Lecture	0:15		
Activity 3-4-1: Serpentine		*	

Segment	Lecture Time	Activity/Skills Time	Total Unit Time
Topic 3-5: Turn a Fire Apparatus 180 Degrees within a Confined Space			
Lecture	0:15		
Activity 3-5-1: Confined Space Turnaround		*	
Topic 3-6: Maneuver a Fire Apparatus in Areas with Restricted Horizontal and Vertical Clearances			
Lecture	0:15		
Activity: 3-6-1: Diminishing Clearance		*	
Topic 3-7: Operate All Fixed Systems and Equipment on a Fire Apparatus			
Lecture	1:00		
To be determined by the instructor			
Unit 3 Totals	**11:00**	**19:00**	**33:00**
Lecture, Activity, and Unit Totals:	**17:30**	**20:30**	**38:00**

Course Totals

Total Lecture Time (LT)	17:30
Total Activity Time (AT)	3:30
Total Skills Time	*17:00
Total Testing Time (TT)	2:00
Total Course Time	**40:00**

Note: Skills time will vary depending on the number of students in the program. It is important to remember that the suggested skill hours are for 30 students.